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ABSTRACT

Until recently, computer-aided drafting and design (CAD) systems were almost exclusively operated on mainframes or minicomputers and their cost prohibited many schools from offering CAD instruction. Today, many powerful personal computers are capable of performing the high-speed calculation and analysis required by the CAD application; however, the price of such a system is still quite high. The faculty members in the Industrial Technology Department at West Texas State University have developed and integrated a CAD system into the freshman engineering graphics courses. After reviewing course objectives and essential CAD fundamentals and assessing the existing computer equipment in the department, they developed a package of integrated computer-aided drafting instruction (ICADI) materials, including computer software and instructional materials for classroom use. Special drafting procedures allow users to create drawings in a very short time without previous programming or computer operation experience. Unlike expensive and sophisticated systems, ICADI does not store data for a drawing in the computer's internal memory and thus does not require a large memory. The video screen of the systems does not display high-resolution drawing, instead it displays drafting procedures and parameters associated with the drawings. The output device for the ICADI system is a plotter that provides excellent resolution and line quality. Although the ICADI computer software has limitations, the system does enable the student to learn CAD concepts rapidly, gain experience in CAD usage, and produce high-quality drawings simply and directly. (Sample drawings are included in this report.) (KC)

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INTEGRATED COMPUTER-AIDED DRAFTING INSTRUCTION (ICADI)

Presentation Topic: CAD Instruction Using Low Cost Personal Computers

Program Chairperson: Dr. Donald D. Envick

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Presented at: American Vocational Association Annual Convention
New Orleans, LA
December 2, 1984

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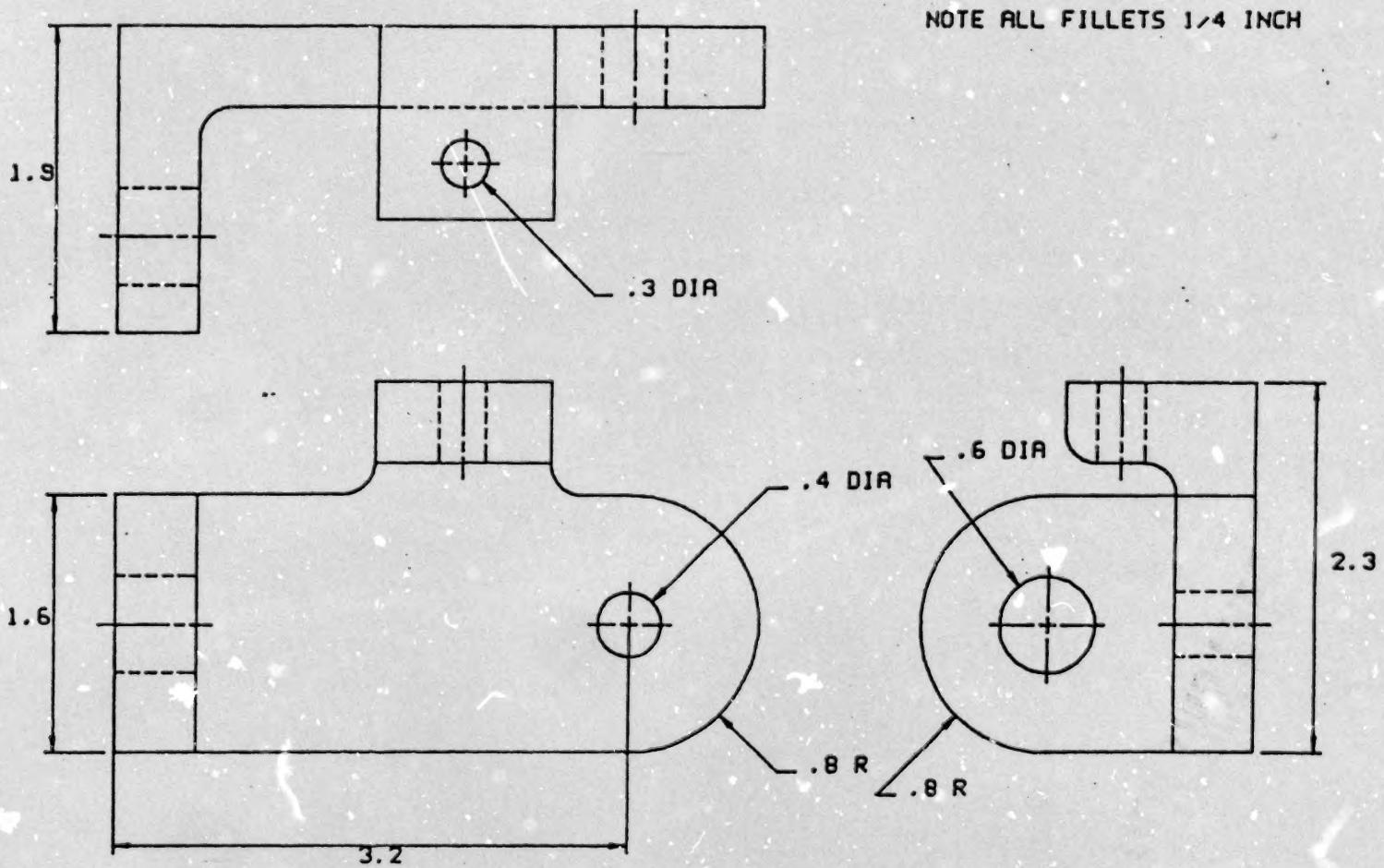
Computer-aided drafting and design (CAD) is emerging as a major topic in industrial technology education. Until recently, the CAD systems were almost exclusively operated on mainframes or minicomputers. These systems cost hundreds of thousands of dollars. The prohibitive cost of CAD systems prevented many schools from offering CAD instruction to their students. Today, many powerful personal computers are capable of performing high speed calculation and analysis required by the CAD application. However, the price of a completed personal computer CAD systems is still quite high. There are other limitations such as peripheral interface, memory requirement, software and hardware compability. Most CAD software and supporting materials are not developed by experienced drafting teachers, and consequently these materials usually do not meet the intended course objectives and teachers' instructional needs.

The faculty members in the Industrial Technology Department, West Texas State University have responded to the latest trend in drafting practices by developing and integrating a CAD system into the freshman engineering graphics courses. After carefully reviewing course objectives, essential CAD fundmentals and assessing the existing computer equipment in the department, we have developed a package of integrated computer-aided drafting instruction (ICADI) materials. This package includes computer software

and instructional materials for classroom use. The ICADI computer software can be adapted to and operated on most low cost personal computers. Special drafting procedures allow users to create drawings in a very short period of time without any previous programing or computer operation experience. The program may be expanded to include functions for special drafting requirements. This feature may be applied to teach advanced CAD.

Unlike expensive and sophisticated systems, ICADI does not store data for a drawing in the computer's internal memory. Therefore, a large memory is not required of the system. The video screen of the system does not display high resolution drawing. It only displays drafting procedures and parameters associated with the drawings. This allows the user to monitor the progress of the drawing on the video screen. The output device of the ICADI system is a plotter. The plotter provides excellent resolution and line quality.

Although, the ICADI computer software has limitations, the system does enable the student to rapidly learn CAD concepts, gain experience in CAD usages, and produce high quality drawings in a simple and direct fashion. The system provides industrial education professionals an excellent and affordable solution to CAD instruction.



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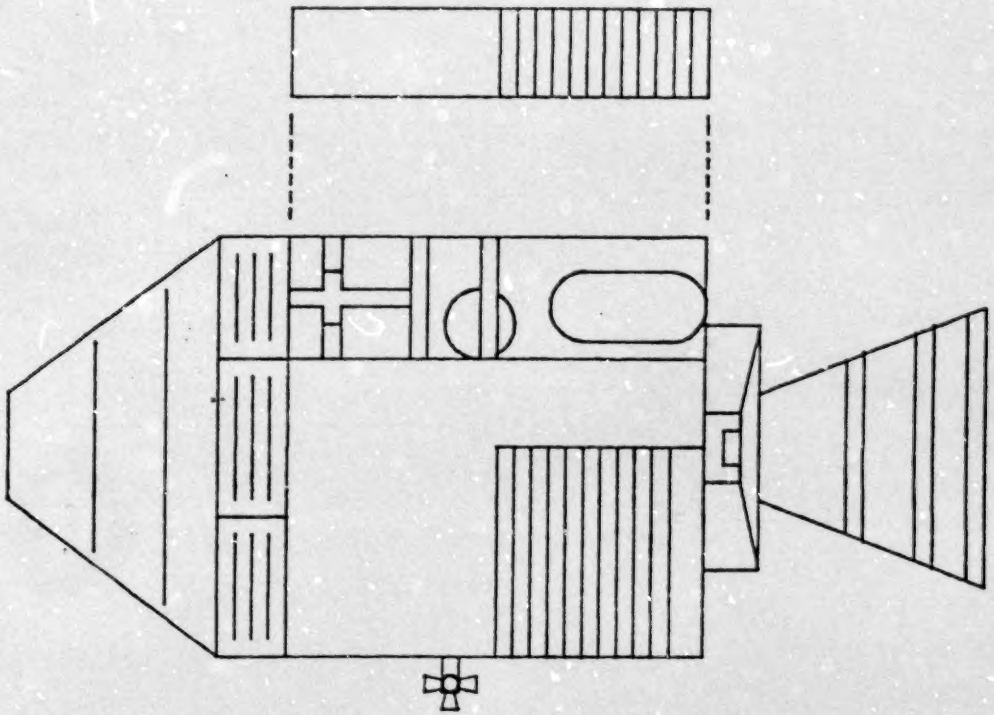

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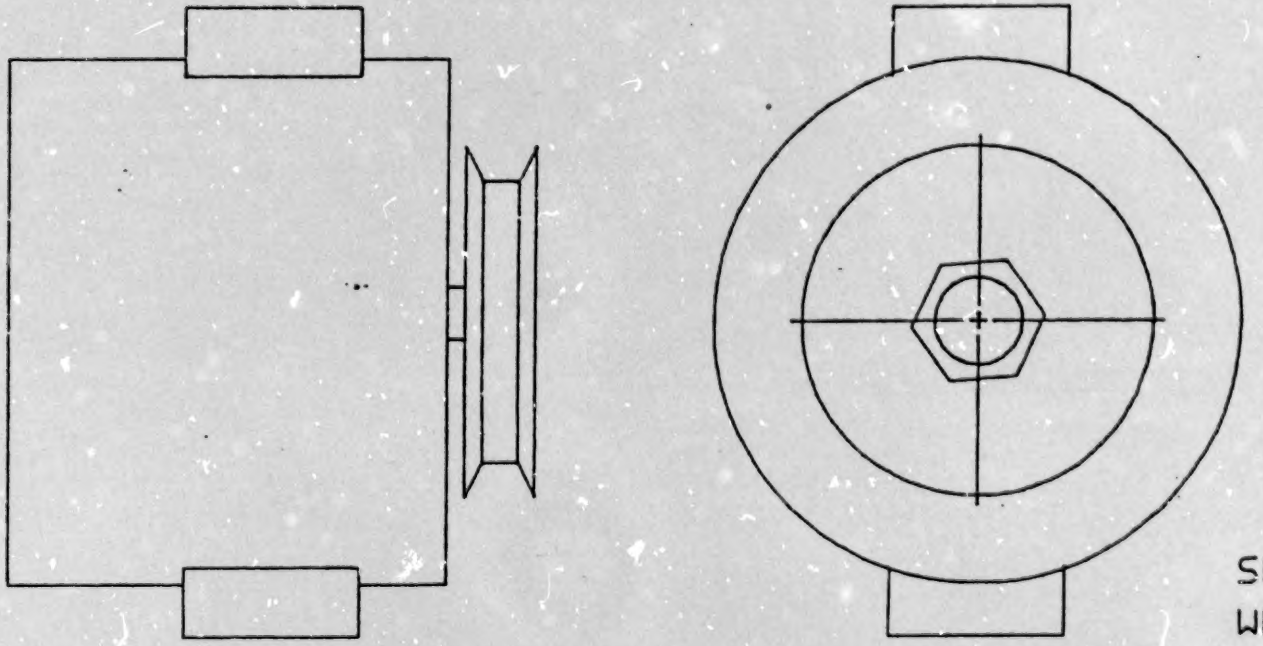

SPECIFICATIONS
WEIGHT 9 LBS
VOLTAGE 12V DC
MAX RPM'S 6000

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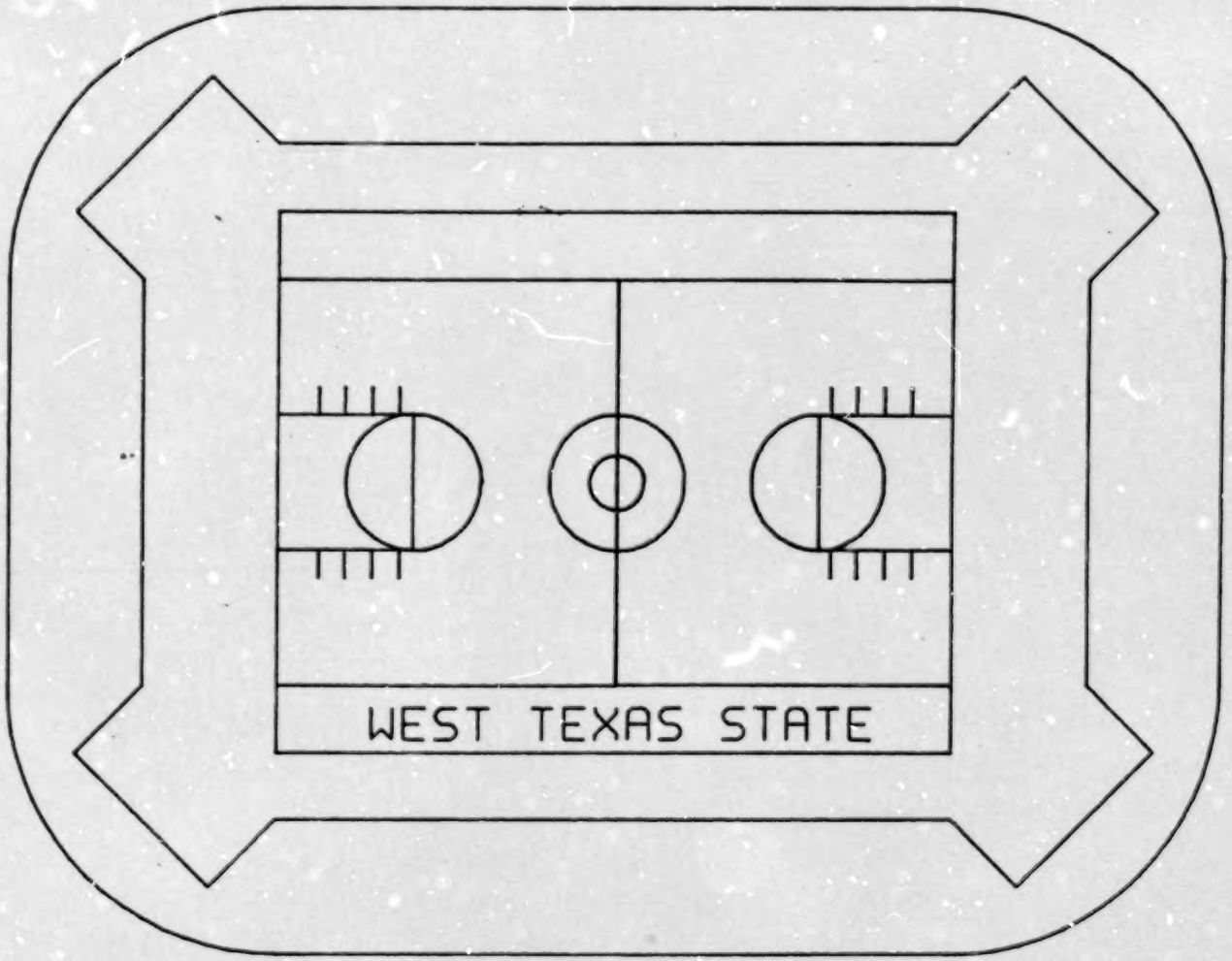

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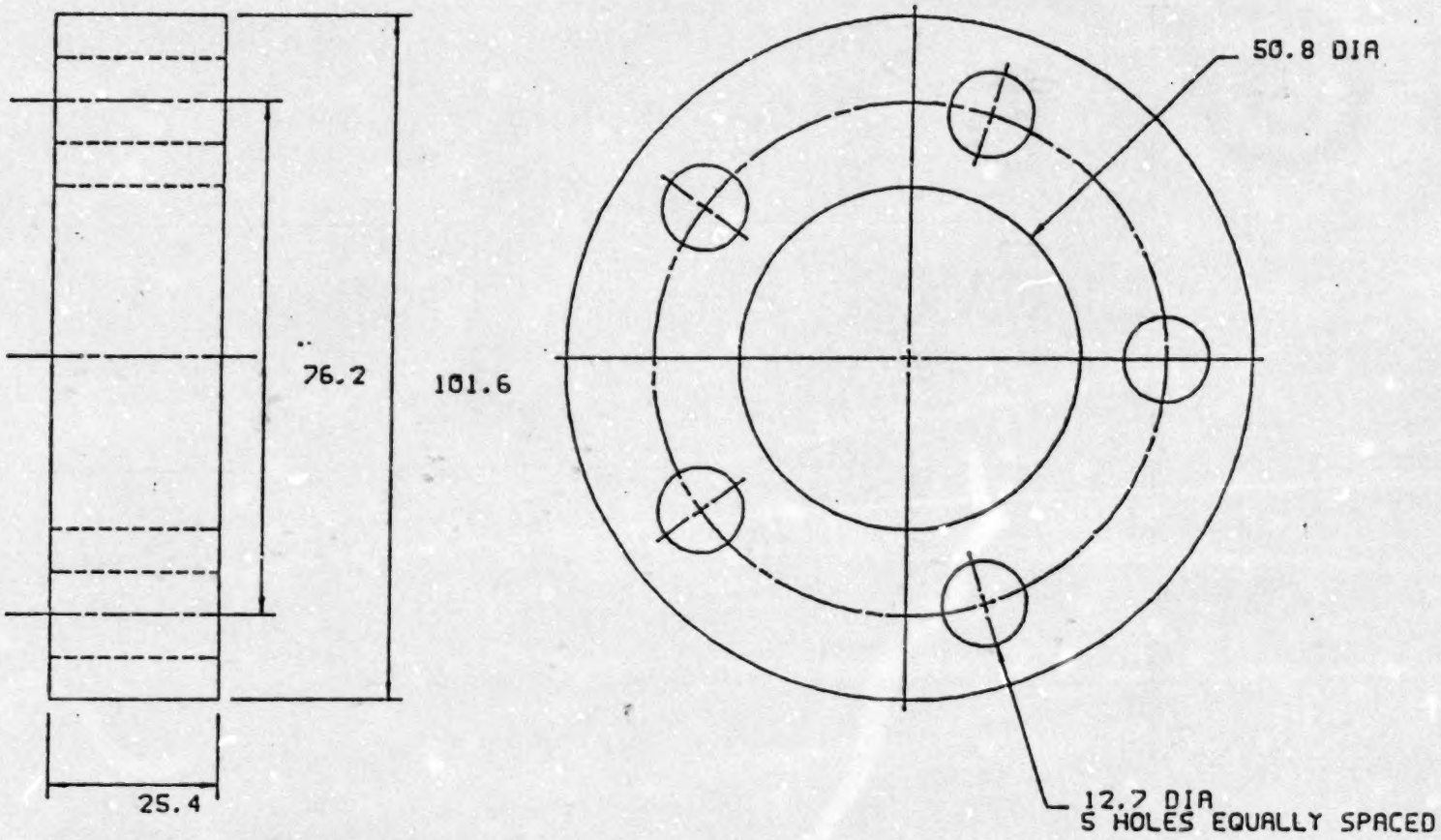

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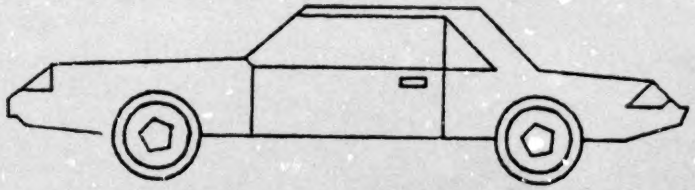

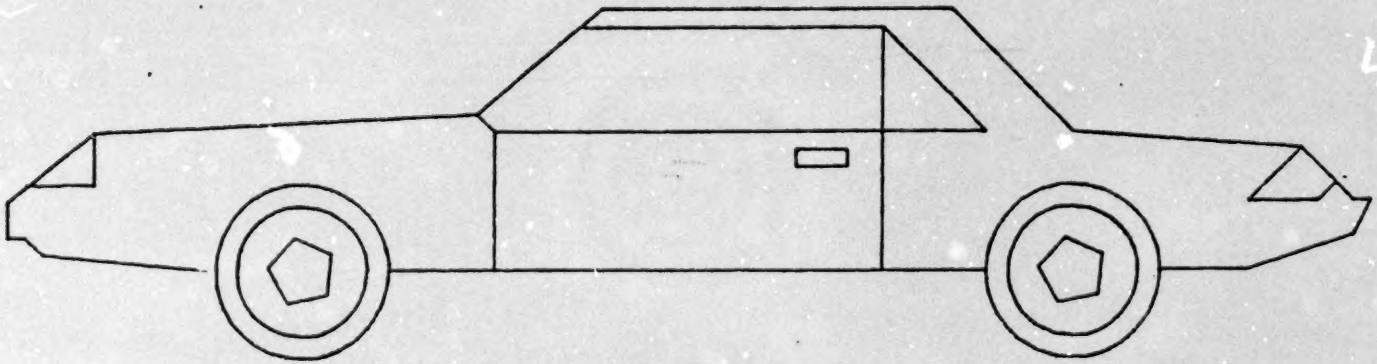

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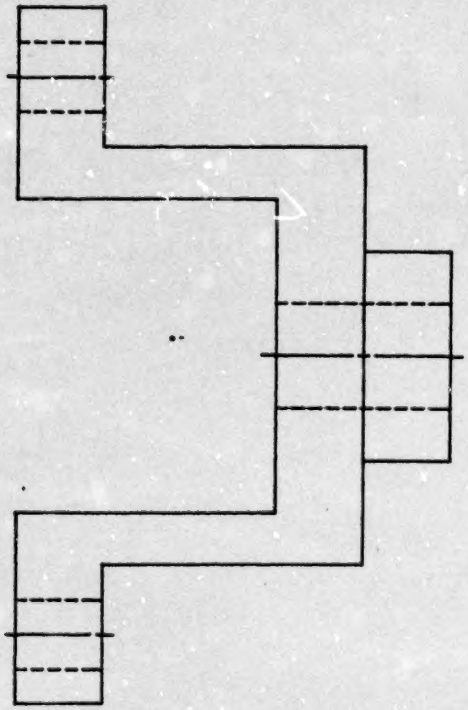

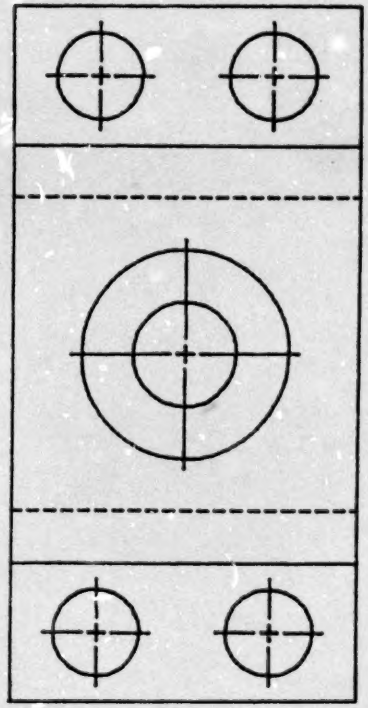

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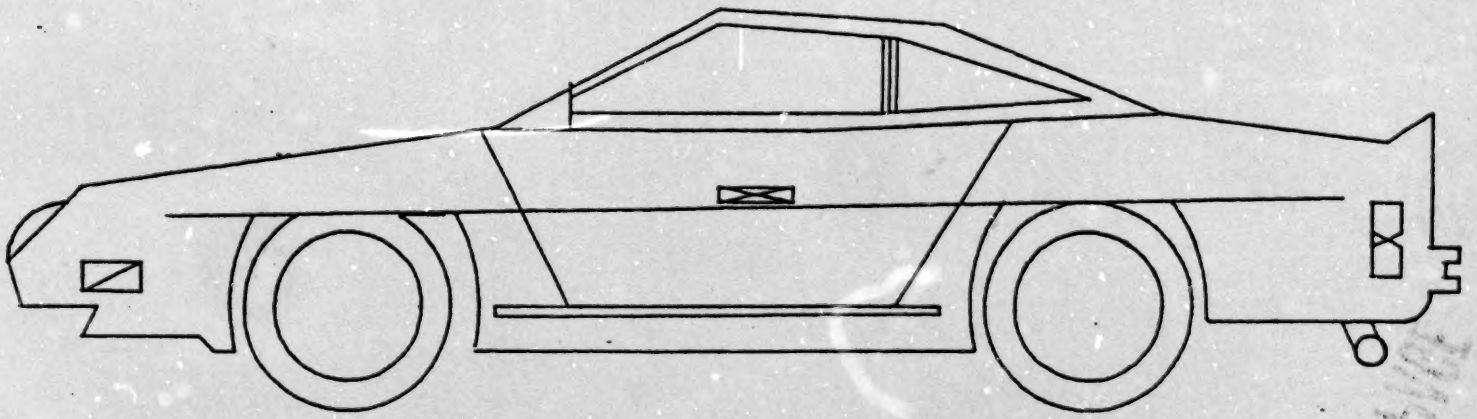

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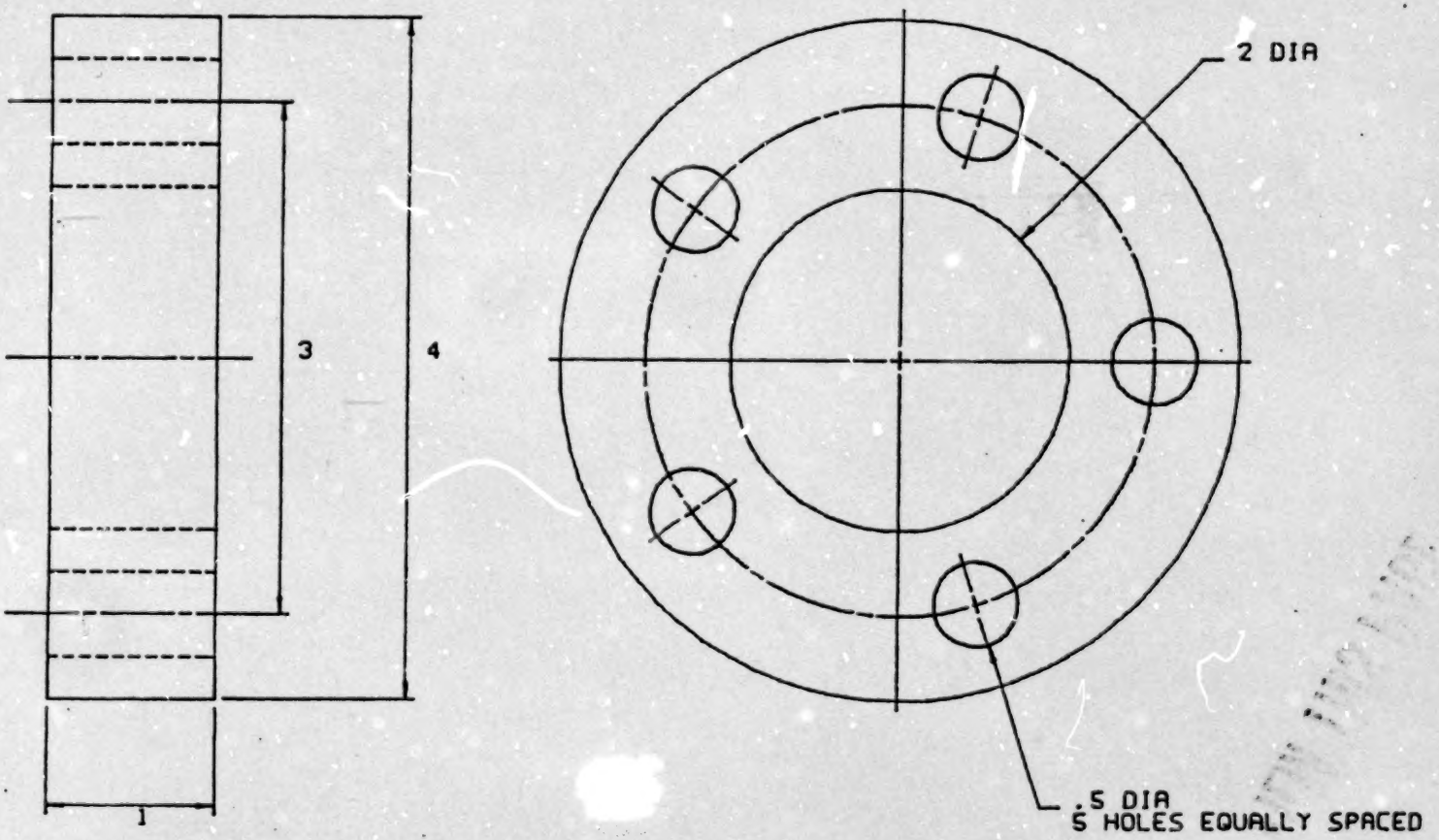

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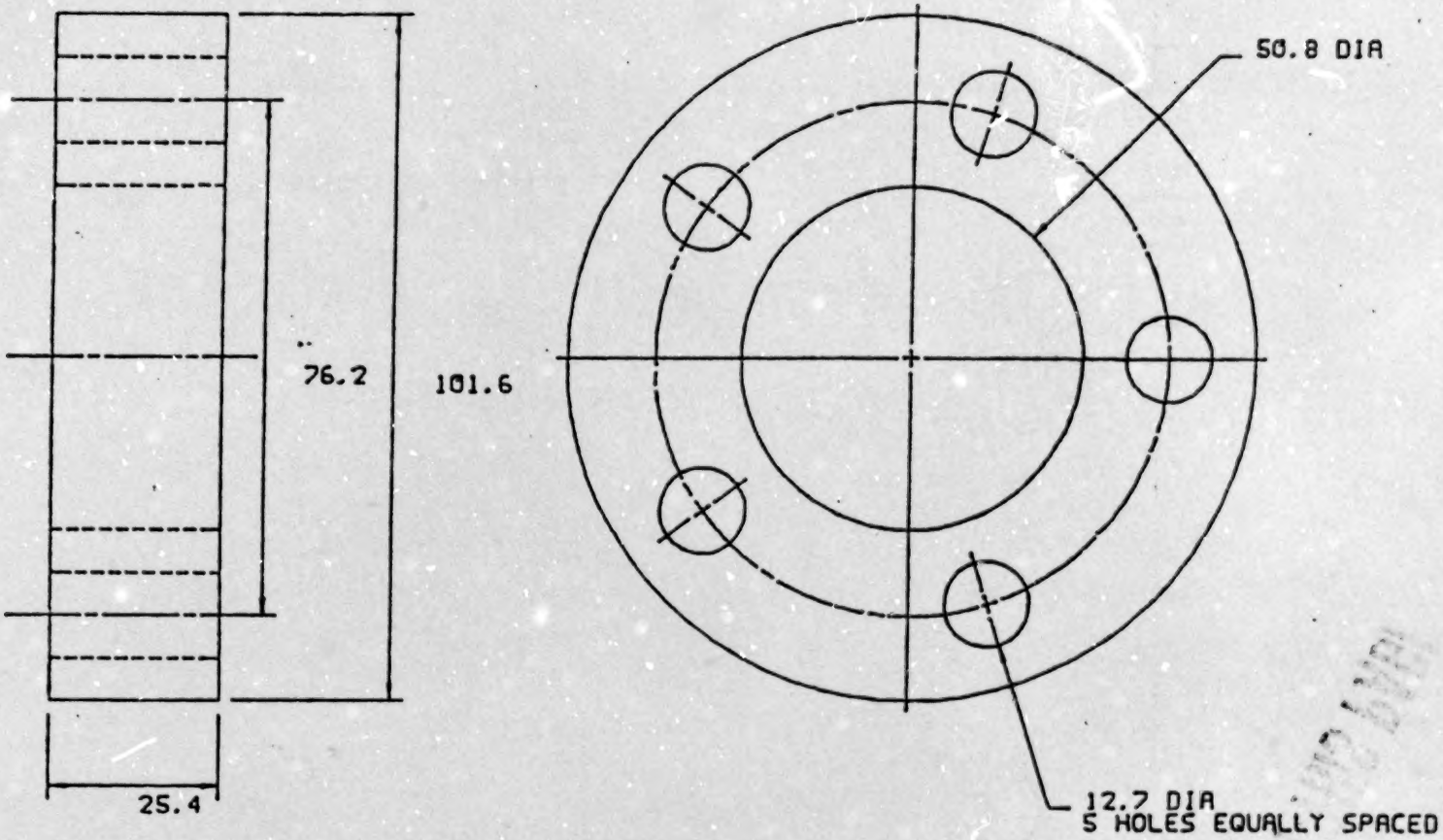

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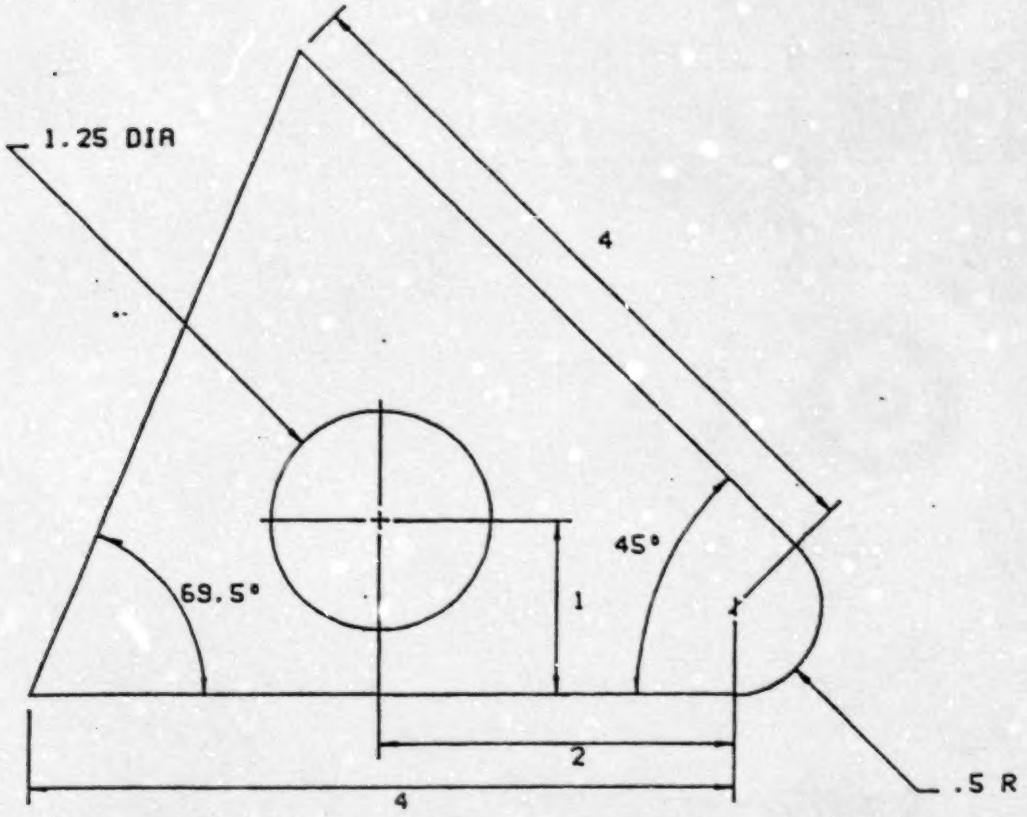
CAN YOU DO IT ?



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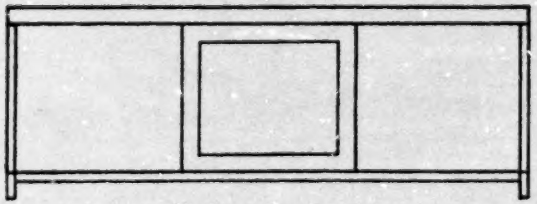

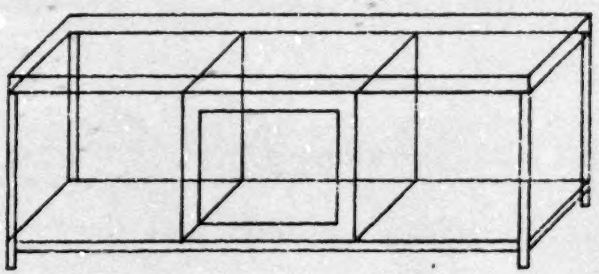

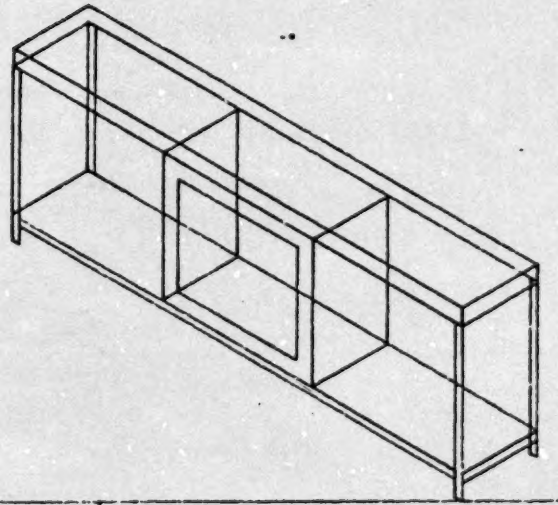

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